KALAELOA SEAWATER DESALINATION

Board of Water Supply

May 19, 2020

www.boardofwatersupply.com

KALAELOA SEAWATER DESALINATION PROJECT

The Honolulu Board of Water Supply is issuing a Request for Proposals ("RFP") for design-build-operate-maintain services ("DBOM") for the Kalaeloa Seawater Desalination Facility Project, a seawater reverse osmosis desalination water treatment plant with a capacity of 1.7 MGD, expandable to 5 mgd. The purpose of the Project is to design, pilot test, permit, construct, start-up, test, by 2024, and subsequently operate and maintain the Project for a term of twenty years.

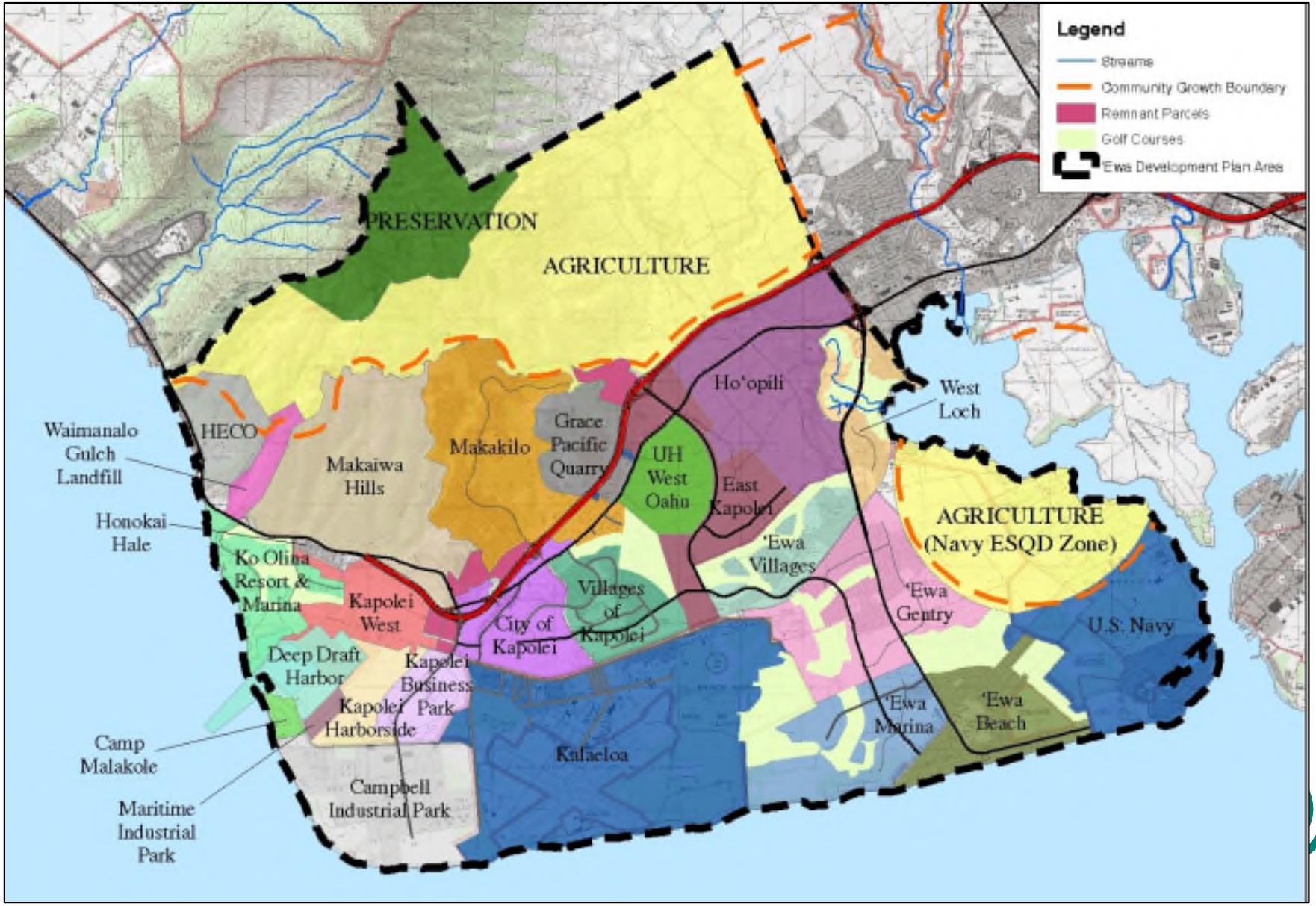
PROJECT OBJECTIVES

- Diversify the water sources on O‘ahu to meet Ewa’s growth and reduce transfers from Central Oahu
- Provide a drought proof freshwater supply for climate change resilience
- Plan for future cost-effective phased expansions
- Provide a sustainable seawater desalination Facility that is cost effective on a life-cycle basis

PROJECT OBJECTIVES (CONTINUED)

- Incorporates Energy Management and Renewable Energy (PV) through-out project's life-cycle.
- Produces water that is a Reasonable Match to existing distribution system's Water Quality
- Causes no detrimental impact to BWS's system and customers in Campbell Industrial Park
- Complies with archaeological inventory survey requirements in accordance with HRS §6E-8 and HAR §13-275

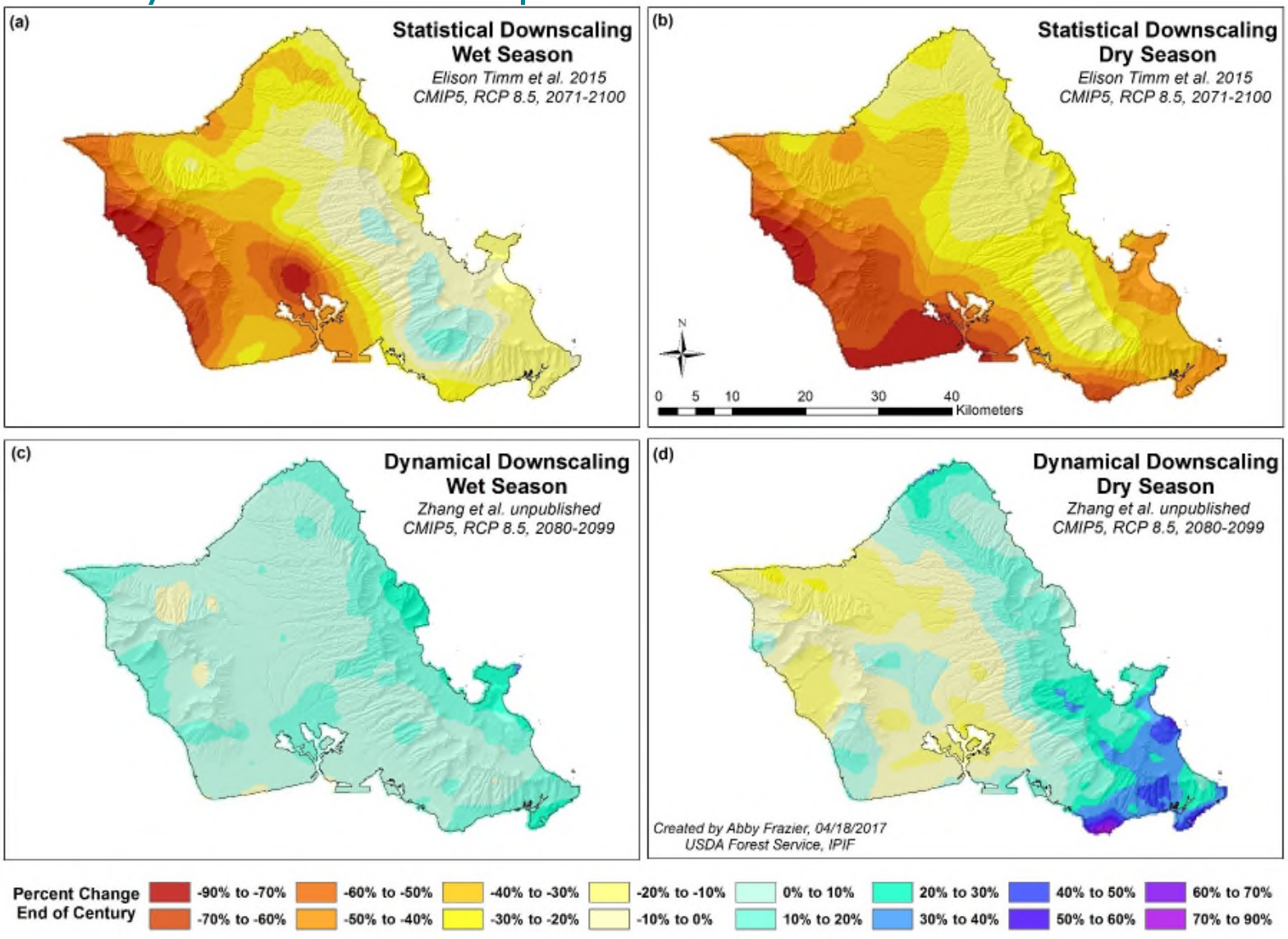
EWA DEVELOPMENT PLAN DISTRICT IMPLEMENTS CITY'S DIRECTED GROWTH POLICES



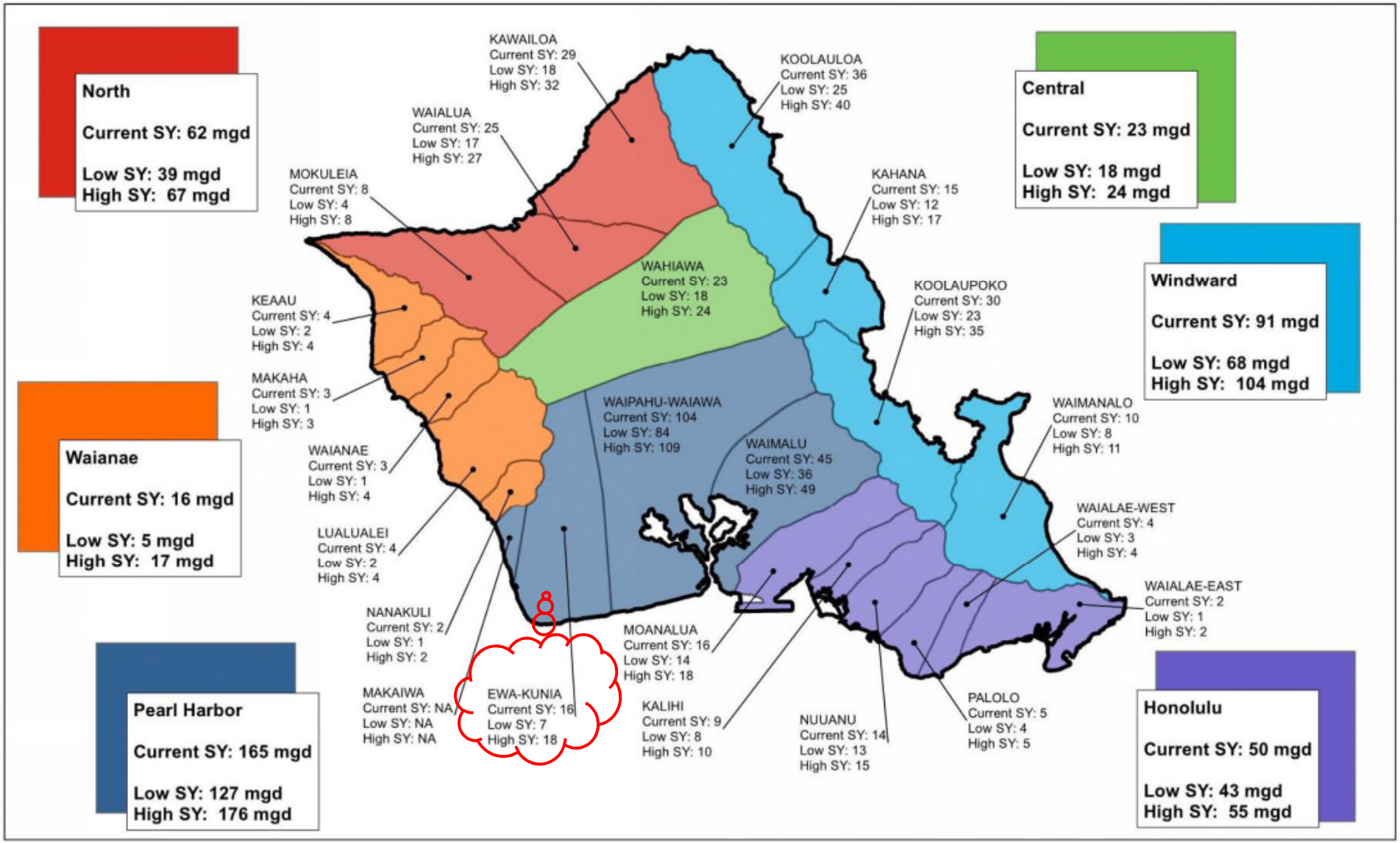
Year 2100: Climate Change Projections May Reduce Aquifer Sustainable Yields

Drier = "Worst Case"

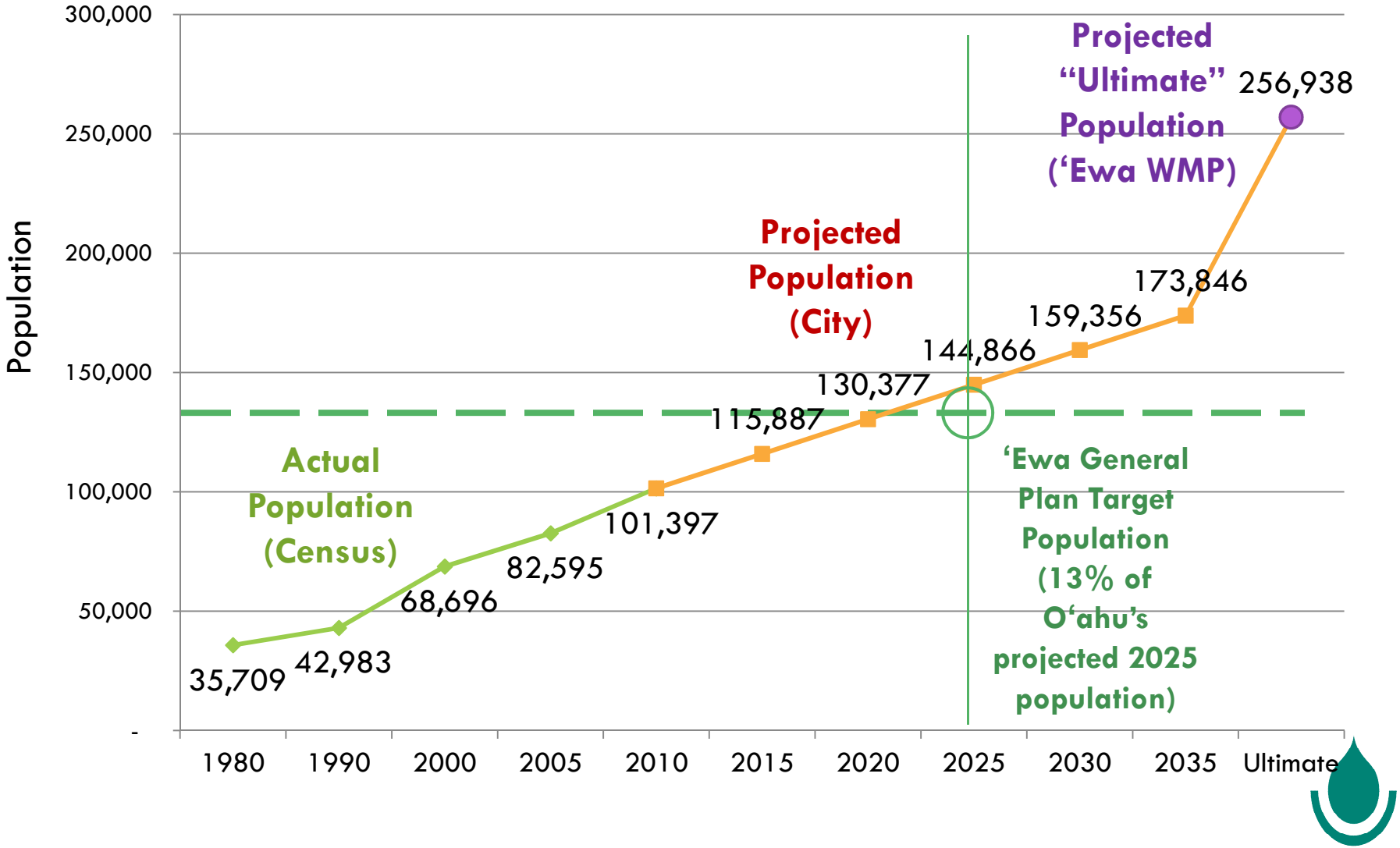
Wetter = "Best Case"



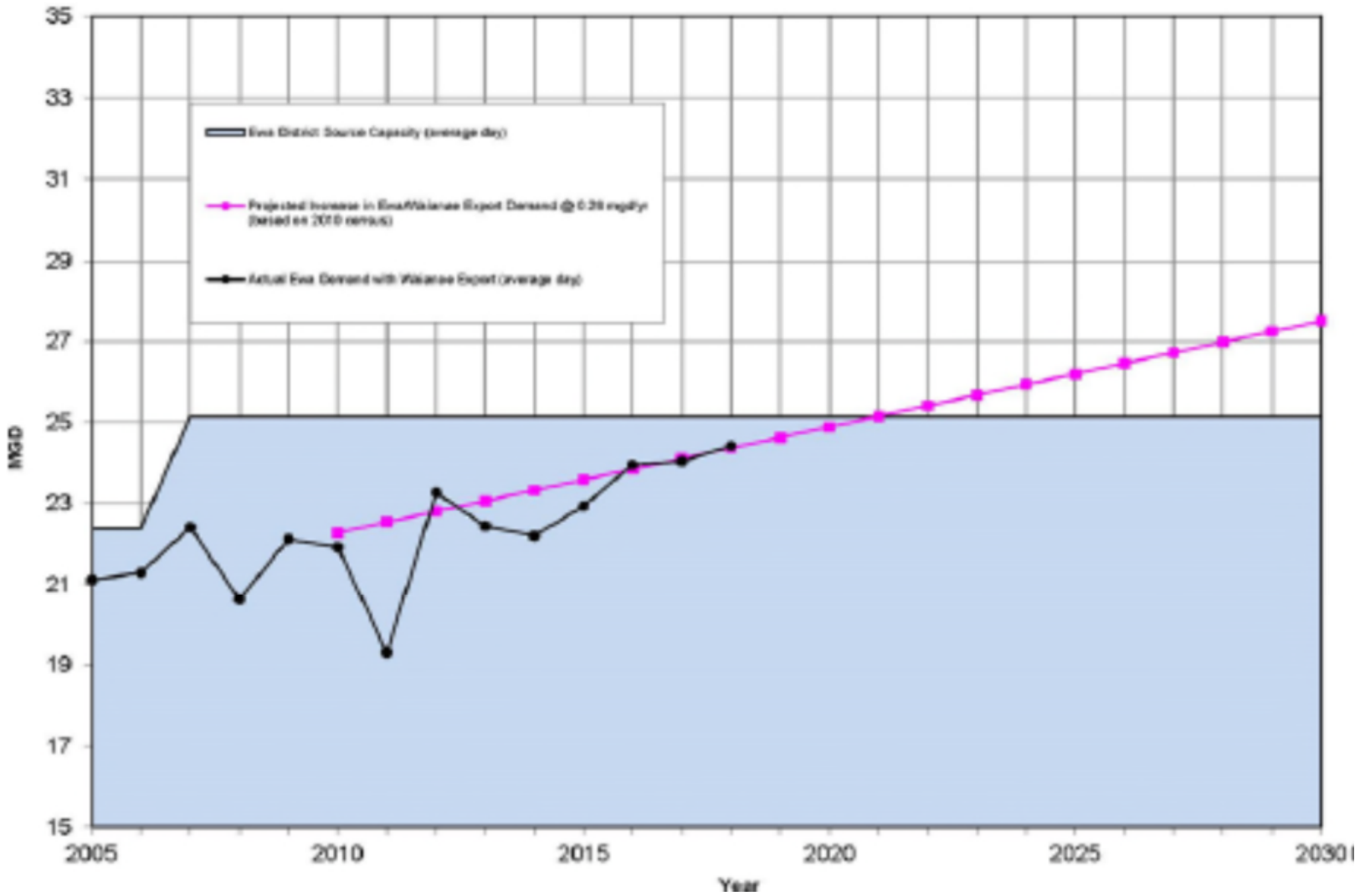
Current and Potential Range of Aquifer Sustainable Yields from Climate Forecasts



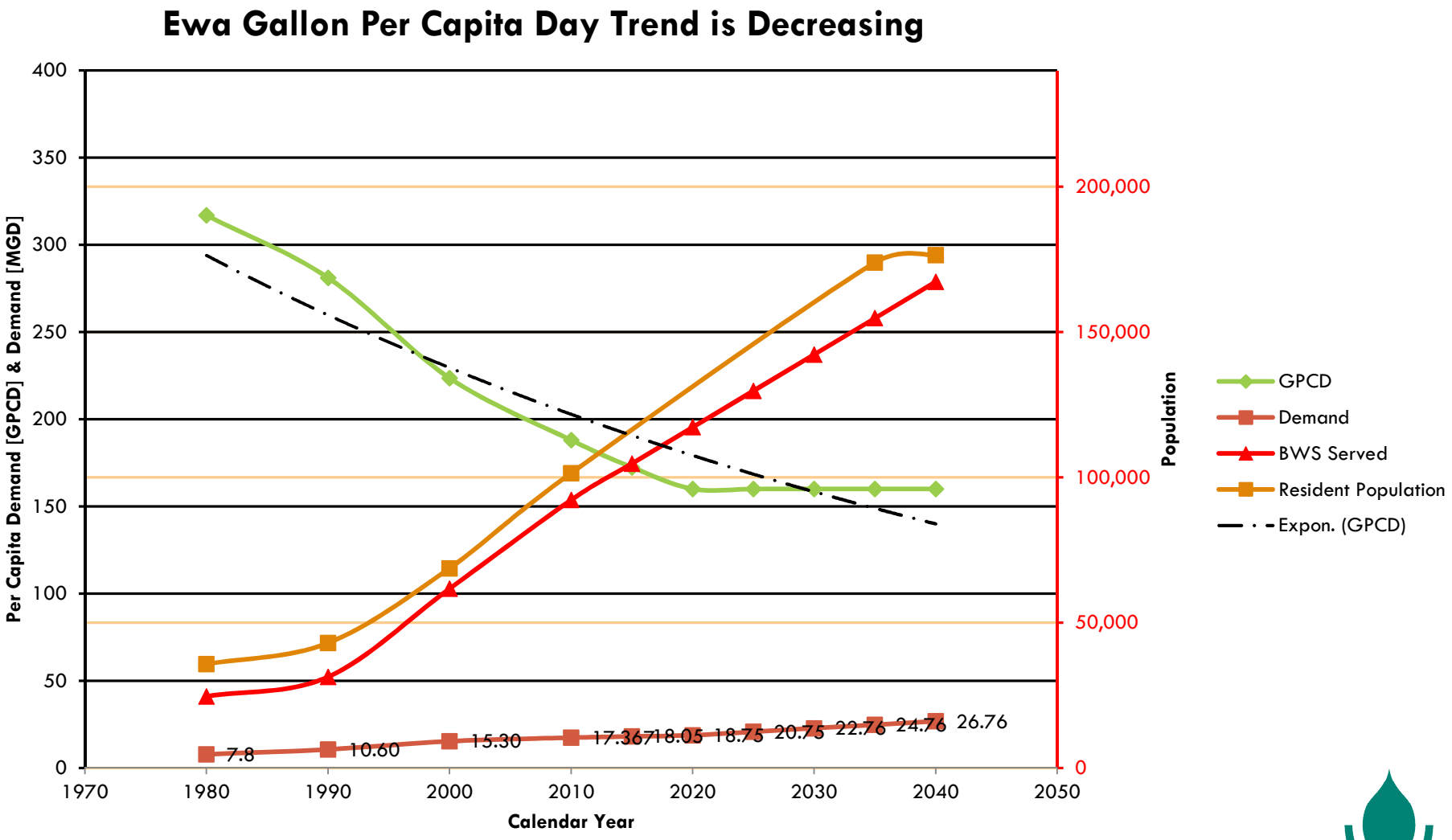
EWA'S POPULATION IS PROJECTED TO INCREASE



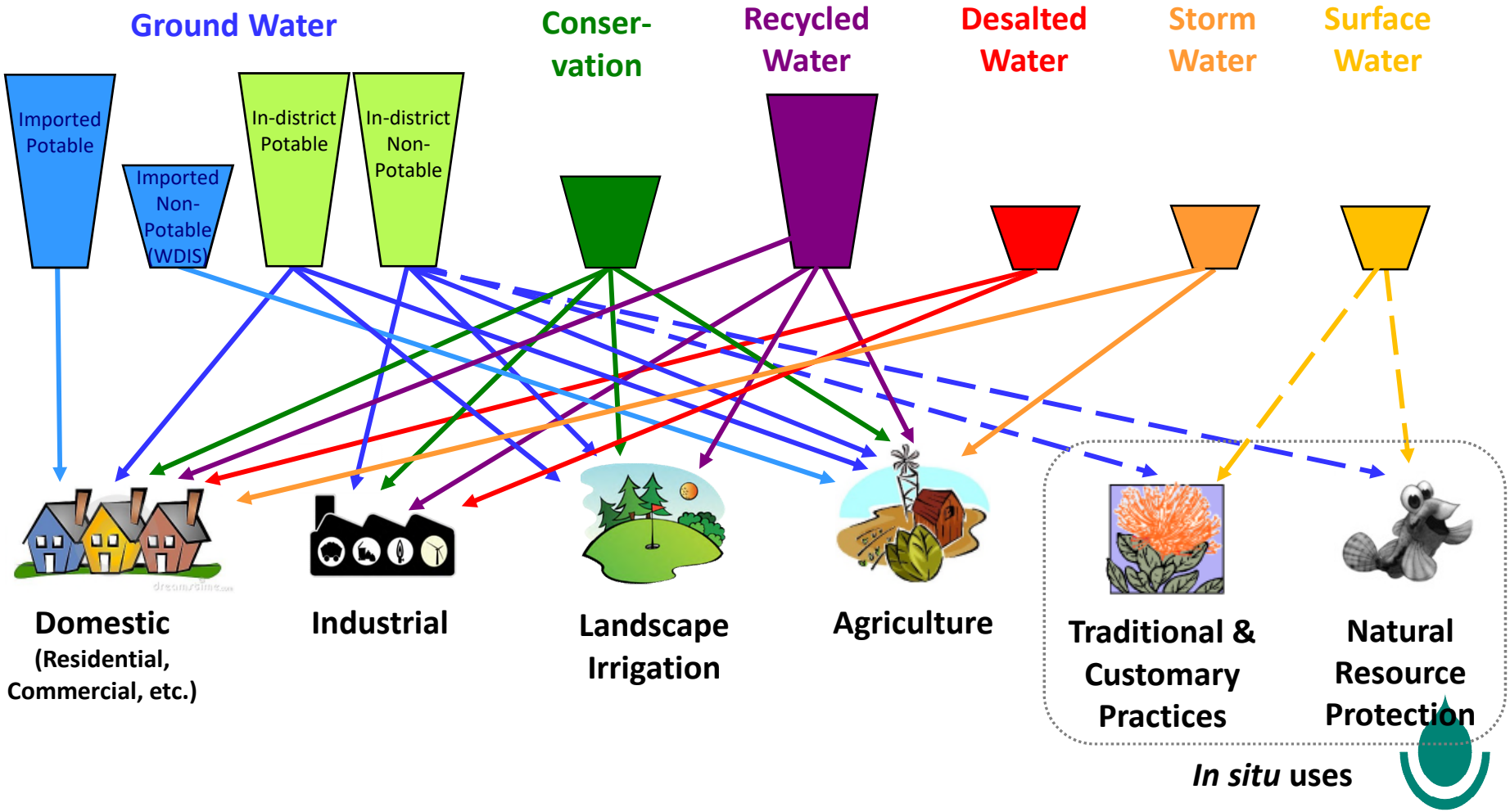
FRESH WATER DEMAND IS APPROACHING BWS EWA SYSTEM CAPACITY

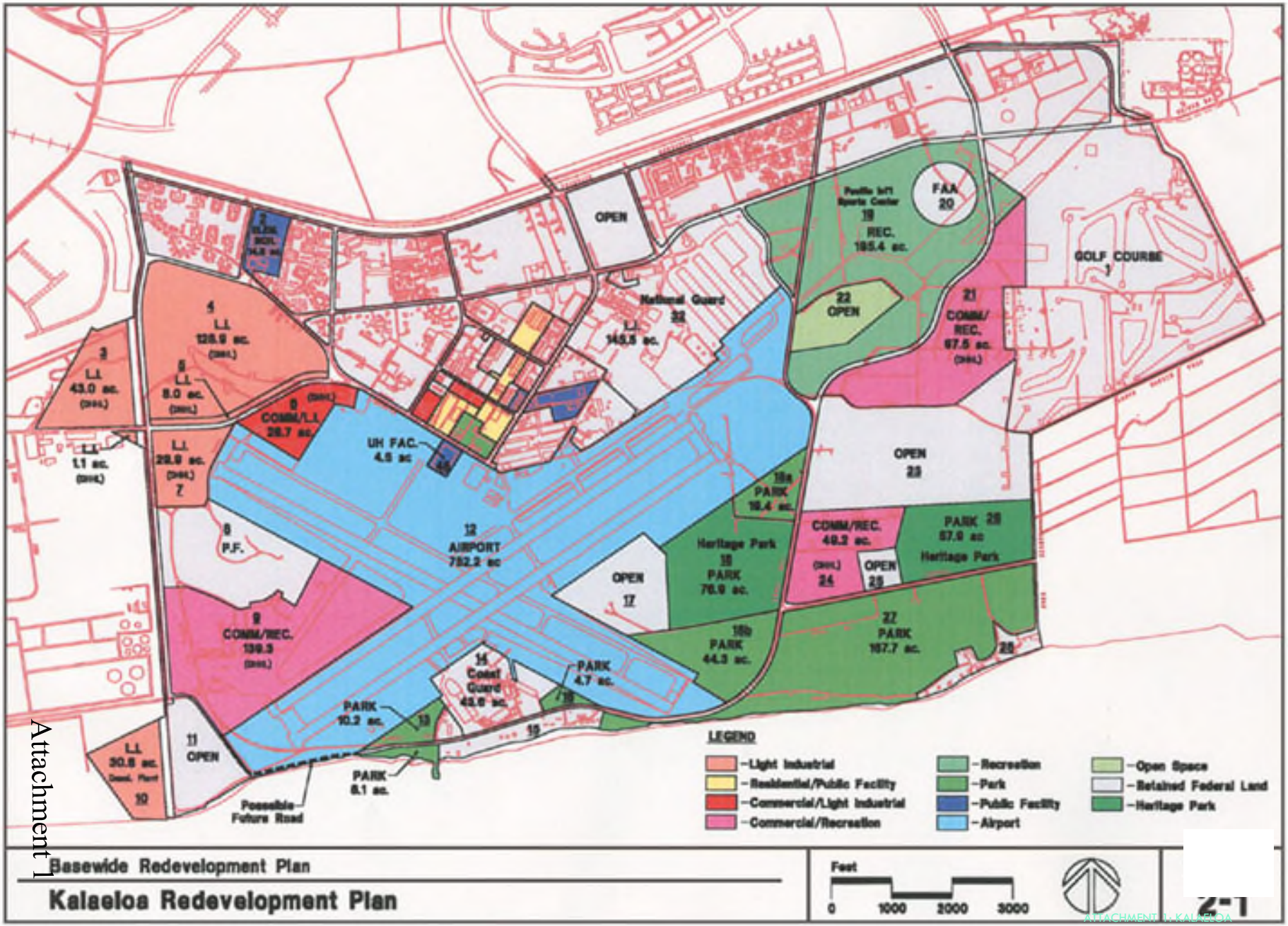


WATER DEMAND PROJECTIONS ARE LOWER WITH WATER CONSERVATION



ONE WATER DIVERSIFIED WATER SUPPLY OPTIONS





Basewide Redevelopment Plan

Kalaeloa Redevelopment Plan

Feet

0 1000 2000 3000

2-1

Attachment 1

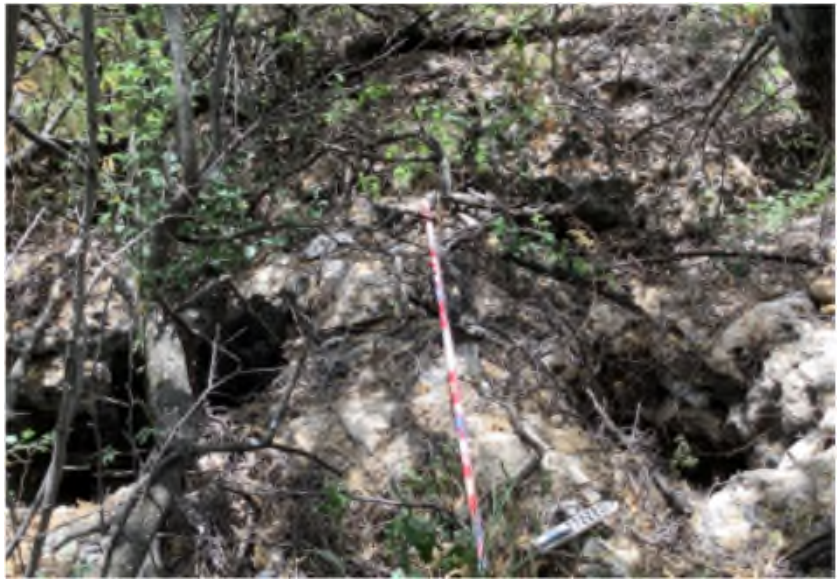
PROJECT MEETS FEDERAL PUBLIC LAND CONVEYANCE CONDITIONS

- The Project was authorized by Congress on September 21, 2005 in P.L. 109-70, Section 1638. A US Bureau of Reclamation Grant Application has been accepted for an up to 25% Federal match. A Final EIS was filed in 2008 with OEQC. As part of the grant application, an updated engineering feasibility study and financial capability determination has been completed and a NEPA EA FONSI meeting Section 106 Archaeological Inventory Survey is being developed.

Kalaeloa Seawater Desalination Site

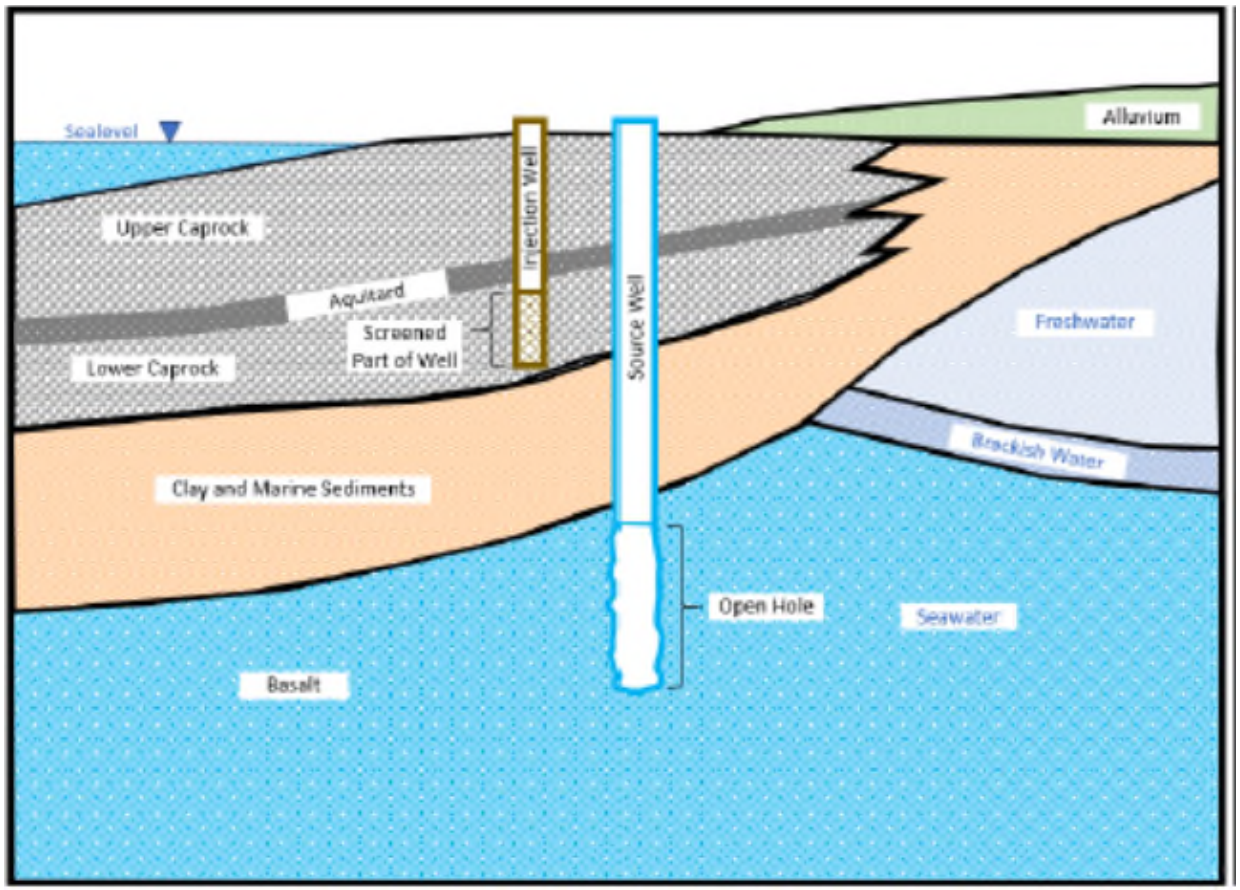
Kalaeloa Seawater Desalination Conceptual Site Plan

PIT CAVES IDENTIFIED WITHIN THE PROJECT AREA



BWS is seeking SHPD approval for recordation of pit caves, Monitoring Plan and Preservation Plan, as effective mitigation

Ewa Caprock & Basalt Geology is Hydraulically Separate



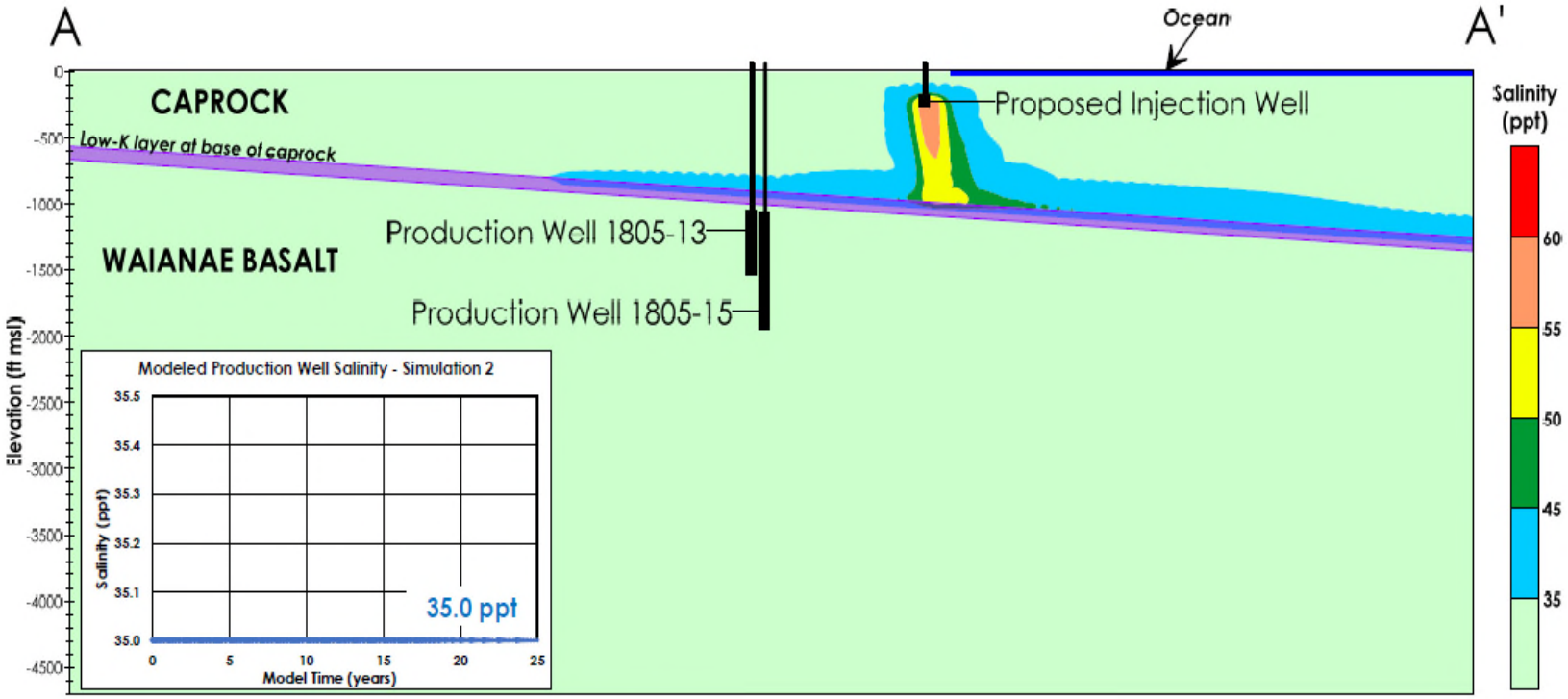
Saltwater source is from deep wells.

Brine injection into the overlying caprock.

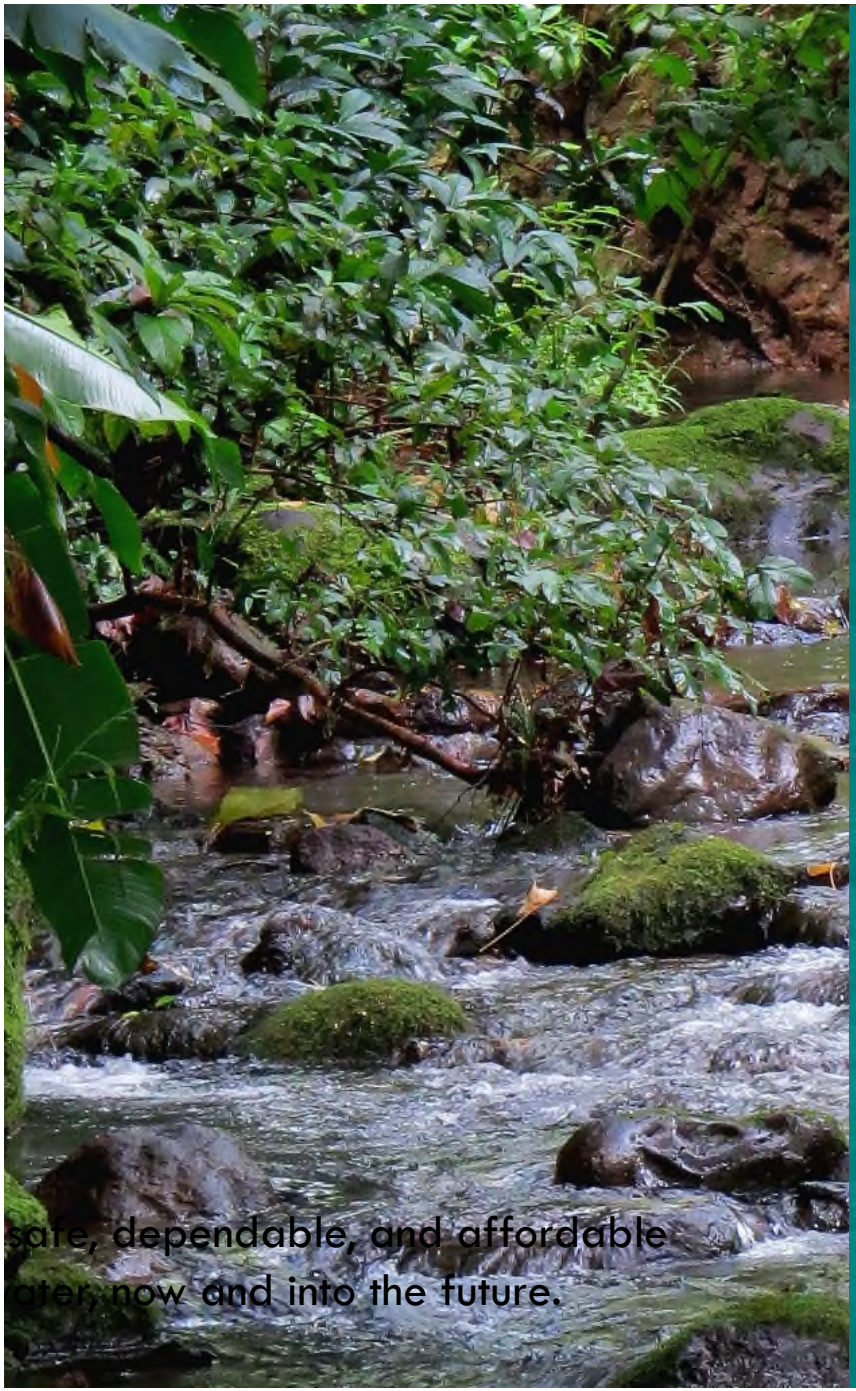
JCIP is an underground injection control area regulated by DOH

Concentrate Disposal Well Groundwater Model Findings

- Brine will sink because of higher density and flow along the caprock/basal contact along a 4% slope to the ocean and be diluted. Brine will not impact the benthic nearshore environment.



B) Simulation 2 - Base of Caprock K = 0.1 ft/d



Mahalo!

BOARD OF WATER SUPPLY

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